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ABSTRACT

This program is the 1972 Distinguished Achievement Award Entry from Western Washington State College. This performance-based, field-centered program is located in six Seattle schools (K-12) which are ethnically, socially, and economically mixed. The participants complete the program in 2 quarters and on graduation are issued a provisional certificate to teach. To help define his future teaching role, each participant a) studies a variety of teaching styles in various classroom situations and b) assesses his own personal teaching style and practices. In developing his own style, the participant selects individually paced, performance-based instructional modules. He is assisted by a clinical professor and supervising teacher. This training design allows each candidate to develop a teaching style which is compatible with his personality. The attainment of the pupil's goals is the participants' criterion of success. The self-supporting program exists in a parity relationship with college, school district, and professional education association personnel. (The appendixes include information on program objectives, practica, evaluation, and the functions of learning.) (Author/BRB)

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THE WESTERN WASHINGTON STATE COLLEGE CLINICAL PROGRAM FOR TEACHER EDUCATION AT SEATTLE, WASHINGTON

Abstract

This performance-based, field-centered program is located in six Seattle schools (K-12) which are ethnically, socially and economically mixed. W.W.S.C. students complete all of the program's professional education components in two quarters and, upon college graduation, are issued provisional certification to teach.

The program differs markedly from most performance-based programs because most focus primarily on teacher behavior. The ultimate criterion used to test a prospective teacher's success in this program is the behavior of his pupils--their achievement of specified, significant goals.

To help define his future teaching role, each student: (1) experiences opportunities to study a variety of teaching styles in a variety of actual classroom situations, (2) assesses his own personal teaching style and practices, and (3) tests various styles in numerous situations so that he is able to develop a style which is compatible with his capabilities and personality. In developing this style, the student uses individually paced, performance-based instructional modules which he selects from a large pool of such modules readily available on-site. He is also assisted continuously by his Clinical Professor and supervising teacher as he adapts and

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refines his style. This training design allows each candidate to develop a teaching style which is highly appropriate to his own personal characteristics.

The program, developed in a parity relationship among college, school district and professional education association personnel, is fully operational. It is self-supporting and, in fact, requires less financial support than the college's traditional student teaching program.

THE WESTERN WASHINGTON STATE COLLEGE CLINICAL PROGRAM FOR TEACHER EDUCATION AT SEATTLE, WASHINGTON

I. Introduction

During the past two years, the Education Department at Western Washington State College has developed an alternative to the standard undergraduate program leading to initial teaching certification. This alternative is a performance-based, field-centered Clinical Program in which students complete professional components requisite for certification in two quarters. The program was generated from: (1) W.W.S.C. staff work in development of an elementary teacher education model funded in 1968-69 by the U. S. Office of Education, Bureau of Research; (2) a Teacher Corps grant; (3) an E.P.D.A. grant to prepare teachers of Early Childhood Education teachers; (4) an E.P.D.A. B-2 grant in cooperation with the Auburn, Washington schools; and (5) testing of prototypes of the new model at Seattle, Edmonds and Snohomish, Washington.

The new Clinical Program differs markedly from other performance-based programs because they focus primarily on teacher behavior with little direct concern or determination of the effects of this behavior on pupils' learning outcomes. The ultimate criterion used to test a prospective teacher's success in this program is the behavior of his pupils and their achievement of specified significant goals.

II. Objectives

The Program's objectives are to:

Organize a viable and functional teacher training consortium involving the professional association, school district and College in parity decision making and support efforts to direct program development and management.

Develop, test and refine a performance-based, field-centered undergraduate teacher preparation program.

Design a preparation program that is increasingly responsive to trainee needs, interests and learning styles, and to school district needs. This is done through optimal utilization of the basic resources available (time, materials, money, space, and people).

Develop a program capable of relating performance level to certification level.

Utilize multiple field settings in which individual trainees can apply and/or adapt the skill and knowledge under development.

Design and implement a program management procedure that makes program assessment and revision an on-going and functional part of the program, i.e., cybernetic.

III. Development

The program is now fully operational in six Seattle public schools (K-12). The pupils in these schools represent a mix of ethnic backgrounds which includes Orientals, Blacks and Caucasians. Approximately forty-eight W.W.S.C. students per quarter now participate in the two quarter sequence of full-time field-centered study. To date the following program objectives have been achieved:

Over fifty (50) experienced teachers in Seattle have been trained to function as teacher training associates, enabling them to carry out training-management-evaluation tasks within the program.

Performance-based and individually paced instructional packages or systems have been developed which provide optional and diverse routes of instruction for trainees leading to subsequent demonstration of the competencies specified in the program.

Performance assessment criteria and/or criteria specification procedures have been specified that allow for determination of both performance and product--what the trainee does (behavior) and the effect of what is done (outcome/product). These procedures allow for both quality control (program accountability) and meeting individual trainees' needs (program responsiveness or personalization).

Approval and support of the program by the appropriate W.W.S.C. curriculum councils and Seattle Public Schools administrative/staff development divisions has been given.

A data collection system, directed toward acquisition of relevant student time and effort data, has been implemented. These data will be used as a part of the basis for subsequent revisions in program substance and/or management.

Conditions for successful implementation of the program at other sites have been specified.

IV. Program Description

A. Major Components

The program's training design includes two major components: (1) an inservice course for teachers who will supervise W.W.S.C. students of teaching; and (2) an entry program, studies in foundations, a laboratory component and a practicum for W.W.S.C. students. These components are discussed below.

The Inservice Program for Supervising Teachers: Education 496, "Practicum in Using Diagnosis and Prescription in Learning", is a 2-3 credit offering that may be repeated for a maximum of 9 credits. We have found that an essential condition for field-centered programs for teacher candidates is systematic study on the part of the experienced

teachers who become the cooperating school supervisors of our students. The experienced teachers who volunteer and are subsequently selected for the program take this course before working with W.W.S.C. students. The first phase of the course is to train the experienced teacher to use the learning packages which will be used to develop teaching competencies in W.W.S.C. students (of teaching). Subsequent phases of inservice study are directed toward refining the experienced teachers' skills in shaping and evaluating W.W.S.C. students' performances.

Entry Program: Education 390, "Professional Practicum and Seminar", is offered for 3 credits. Students are encouraged to use this as an opportunity to observe pupils in schools and in neighborhoods, study and meet in seminars for the general purpose of making career decisions and justifying these decisions in terms of their own study and self-analysis. This is done as full-time study on site.

Foundations: The foundations component is now largely a sequence of standard college courses offered on the W.W.S.C. campus. All students study social foundations in Education 310 and human development in Psychology 352. Elementary teacher candidates complete 36 hours additional in subject areas presumed to be necessary for the teacher of a self-contained classroom. Prospective elementary teachers in the Seattle Clinical Center also take Education 421, "Instruction in the Elementary School" for 5 of these 36 credits. This offering consists of a diagnosis of the future teacher's needs in elementary content areas, together with individualized study of appropriate curriculum materials. Eventually this study will be on-site.

Laboratory Component: Education 491-492, "Laboratory in Instructional Preparation" and "Laboratory in Interaction and Evaluation", is offered on-site for a total of 12 credits. Students are trained through use of performance-based individually paced teaching-learning packages. Thus, students are able to demonstrate both knowledge and the ability to apply this knowledge in classroom situations. The learning packages relate to six major clusters of teaching skills or functions of instruction. These are: (1)

defining objectives; (2) modifying objectives; (3) selecting appropriate instructional strategies; (4) organizing the learning environment; (5) interacting with students; and (6) evaluating teaching/learning performance. (See APPENDIX A.) The packages, which approximate various forms of programmed material, permit the candidate to develop his skill/knowledge at his own rate, using materials appropriate for him at that time and place, and according to his own interests. The evaluative criteria in each package allow for feedback to the candidate from his classroom performance in regard to skill or knowledge covered by that package. Upon successful completion of the laboratory phase, the student is awarded a Temporary Teaching Certificate.

Practicum: Education 494 for 16 credits is offered on-site. Having satisfied the performance criteria established for the preceding laboratory phase, candidates become interns or junior partners on an instructional team. Subsequent evaluation is carried out by both field supervisors and clinical professors through use of data collected about the candidate's performance on a continuing basis in the classroom. Criteria are derived from those specified in the laboratory phase. (See APPENDIX A.)

B. The Teaching Candidate's Program

The sequence through which each prospective teacher passes in this program is as follows:

He completes or nearly completes all work in educational foundations--on campus.

He completes the entry program--on site.

He functions as a paraprofessional in one or more of Seattle's schools for two to three weeks--on site.

Concurrent with the paraprofessional experience, he completes a personal needs assessment to determine which of his capabilities need to be strengthened. This personal assessment is based on observing the fully certificated professional teacher in action and upon known performance expectations as reflected in documents related to the training program.

He confers with a Clinical Professor to arrange an initial 2-4 week program of studies directed toward needs identified in the personal assessment.

He carries out planned program of activities which typically involves: (1) completion of specified instructional packages; (2) completion of certain readings; and (3) application of knowledge and skills gained to actual teaching situations.

He confers again with Clinical Professor to plan the next course of study, based upon outcomes of that just completed. (Obviously, all plans are subject to change at any time--their prime function is to prompt the candidate to make decisions about the kinds of skills and knowledge he should/wants to develop and how best to do this.)

Again the student carries out the planned program of activities.

The student (of teaching) meets the Terminal Objective (see APPENDIX B) established for the laboratory phase of the Clinical Program and he is given a Temporary Certificate, valid for one year, which allows him to assume responsibility for a class of pupils. He is now ready to move on to the practicum phase of the program.

In the practicum phase the student functions as an associate or intern teacher. He continues his professional development by focusing on any identified deficiencies in subject matter competency, instructional skills and knowledge of instructional alternatives.

The student leaves the practicum phase of the program after having met the terminal performance criteria set forth in APPENDIX B. The student is expected to satisfy the criteria at significantly higher levels and in more varied and complex circumstance than the laboratory phase student. At this point, and having satisfied college graduation requirements, the student is recommended for a General Provisional Certificate to teach in the State of Washington.

V. Evaluation

Instructional Packages: Each instructional package requires the clinical student to demonstrate specific skill/knowledge competencies. Some such competencies are assessed by field supervisors, some by the clinical professor, some only by the student and some by any combination of the above. All of the packages require that the student complete at least one

"application level" task, i.e., demonstrate an application of the skill/knowledge in question in one or more real classroom situations. Data from these task performances are used for formative purposes only. The packages, then, are learning devices which provide immediate and continuous feedback to the student so that he can evaluate his own progress and modify his behavior to bring about desired pupil behavior.

Pre-Practicum Student Performance: Prior to entry into the practicum phase each clinical student must demonstrate instructional competency at levels prescribed in the Terminal Objective For Pre-Practicum Phase of Clinical Program. (See APPENDIX B.) In essence this requires that the clinical student bring about significant and desirable changes in pupil performance and that those changes be documented (measurable). At this stage the clinical student is also required to "make visible" the decision making that led to his instructional plan. Thus, the student is assessed on the basis of the effect his instruction has on the pupils. At the same time he is given feedback regarding the process he used in arriving at certain decisions about his instructional objectives, strategies to be used to meet the objectives and materials employed. Here again, evaluation is continuous and based on immediate feedback.

Practicum: During the practicum the student is expected to provide evidence that his pupils are learning as a direct result of the instruction being carried out by the student. This requires that the student apply the instructional model described and presented in APPENDIXES A, B and C. The practicum student who consistently applies the model and whose application of the model results in continuous pupil progress is judged competent to teach in the State of Washington and is recommended for the General Provisional Certificate.

It should be clear from the foregoing description that program evaluation is continuous and characterized by immediate feedback to clinical students and/or their supervisors. It focuses on products such as the instructional packages for clinical students as well as the learning outcomes of their students; and,

it deals with processes such as the techniques which clinical students employ as they work with pupils. Finally, evaluation is personalized to reflect our assumption that different clinical students will learn different things in different ways and at different rates of speed.

To date only three (3) of eighty (80) students have failed to complete successfully this performance-based system. The major variable we find in results achieved by students in this program is the time needed to complete instructional packages. Some students require significantly less time to demonstrate appropriate behavior than others; some need more time. Time, however, is not, in our opinion, the critical variable. Rather, performance is; and the incidence of performance at criterion level is extremely high--close to 98 percent. Thus, we are satisfied that the program is effective.

VI. Personnel and Budget

This program's organizational structure calls for a ratio of one Clinical Professor for each twelve laboratory and each twelve practicum students each quarter. In addition each practicum student has a supervising teacher. Each Clinical Professor's salary and benefits amount to $16,000 per academic year. Each supervising teacher receives $48.00 per practicum student per quarter.

To establish the Clinical Teaching Center, the original outlay for materials and equipment was approximately $5,000. To upgrade materials, approximately $500 per year is required.

Based upon one and one-half years of experience, we estimate that the Clinical Program requires less financial support than our traditional student teaching program. The new program is self-supporting and no "soft" money is involved.

APPENDIX A

THE PERFORMANCE OBJECTIVES FOR THE WWSC CLINICAL PROGRAM IN TEACHER EDUCATION

Laboratory Part of Clinical Program

Study Pupils

Describe in own words behaviors of pupil populations by age or other categories which are reasonable expectations for the population as a whole.

Observe and describe evidence of varied social behavior patterns of selected pupils.

Observe and describe evidence of varied physical behavior patterns of selected pupils.

Observe and describe evidence of varied intellectual behavior patterns of selected pupils.

Define Objectives

Specify the evidence that pupils have learned, in terms of changes in what pupils are able to do. Specify outcomes of pupil learning which are consistent with some authoritative description of a content field.

Specify evidence of simple cognitive behavior change.

Specify evidence of complex cognitive behavior change.

Specify evidence of affective behavior change--valuing.

Specify evidence of psychomotor behavior changes.

Specify evidence of divergent thinking which is appropriate to some content framework.

Adapt Objectives for Individual Pupils

Modify behavioral objectives so that they describe changes in an individual pupil's behavior based upon the repertoires of relevant behavior already acquired by that pupil.

Define the prerequisites for specific learning tasks.

Diagnose the extent to which individual pupils possess those prerequisites.

State a variety of levels of outcomes according to different pupils' apparent readiness for one, or a set, of learning tasks.

Plan Learning Activities

Write plans which specify appropriate practice by pupils of behaviors which are stated in the objectives.

State in own words characteristics of inquiry teaching strategies.

Write specifications for appropriate practice by pupils under simulated conditions, and for realistic or practical conditions.

Select Learning Resources

Select learning materials which cue correct responses by pupils.

State in own words characteristics of various learning materials, e.g., print, in the form of reading material designed for particular pupil populations; film, recorded sound, programed learning sequences, displays, etc.

Correctly demonstrate operation of instructional devices--projectors, tape recorders, spirit duplicator, etc.

Evaluate learning materials with respect to criteria for a specific learning task.

Produce learning materials to meet specific requirements of pupils in a particular setting, e.g., displays, transparencies, stories, printed instructions, programed learning materials, games, etc.

Apply selected learning materials so that they cue correct practice by pupils of specified behaviors described in objectives.

Interact With Pupils To Implement Plans

Elicit appropriate changes in pupils. Elicit frequent, overt responses from pupils. Reinforce pupil responses appropriately.

Elicit responses from pupils which strongly suggest a favorable set towards a learning task.

Provide a setting for pupils to express their perception of the results of a specific learning task.

Elicit responses from pupils which clarify or re-state their perceptions of a specific learning task.

Elicit evidence of simple cognitive behavior changes in pupils.

Elicit evidence of complex cognitive behavior changes in pupils.

Elicit evidence of psychomotor behavior changes in pupils.

Elicit evidence of affective behavior changes in pupils. - valuing

Elicit evidence of divergent thinking.

Evaluate effectiveness of own verbal teaching strategies (analysis of interaction), propose revised strategies, re-teach.

Evaluate questioning by teacher and pupils.

Evaluate responses by teacher and pupils.

Evaluate "teacher talk."

Evaluate "pupil talk."

Evaluate Pupil Performance

Write questions, problems, etc., which constitute a representative sample of the behavior described in the objective(s).

Construct tests which pupils may use to test their own knowledge, their progress towards a performance objective.

Devise application tests of pupils' ability to perform the objective.

Have pupils respond to evaluative instruments, compare pupil performances to behavior specified in objectives.

Revise instruments.

Confer with pupil(s) and gain acceptance of appropriate next step by pupil--e.g., re-cycle, select next task, etc.

Revise own teaching plan (strategy) in order to increase likelihood of more correct responses, more learning, on part of pupils.

Practicum Part of Clinical Program

Demonstrate these objectives while directing the learning of pupils in real classrooms:

Justify objectives as consistent with some authoritative description(s) of the appropriate content field.

In a series of learning sequences, specify objectives which describe appropriate

simple cognitive behaviors

complex cognitive behaviors (and/or psychomotor behaviors)

affective (valuing) behaviors

divergent behaviors.

Modify objectives in terms of individual pupil's repertoires of relevant behavior.

State, design or write plans which provide for

appropriate practice of the specified behavior in the objectives

cues designed to elicit correct pupil responses--implement appropriate practice through instructional materials, information/instruction by persons, etc.

alternative strategies (varied amounts and kinds of appropriate practice and cues) for learners with different degrees of readiness

instruments and procedures for teacher-evaluation of pupil achievement and pupil self-evaluation

self-evaluation by teacher.

In light of the plan, and considering the nature of the objective, interact with pupils in such a way that pupils demonstrate the specified behaviors at criterion levels.

Elicit frequent responses from all, or most, of pupils.

Reinforce responses appropriately, i.e., in such a way that pupils tend to repeat or follow-up correct responses and avoid repeating incorrect responses.

Elicit perceived purpose, i.e., elicit responses from pupils which can be assumed to be evidence that pupils accept, and hopefully value, undertaking the task or series of tasks.

Provide environment which promotes interchange among pupils and others concerning the consequences of undertaking learning tasks.

Provide opportunities throughout task for pupils to express their perceptions as the personal consequences of their activities.

Induce responses indicative of favorable set toward the task.

Re-structure stimuli (questions, problems, arrangements of instructional materials, etc.) so that pupils replicate appropriate practice and/or make correct responses.

Provide pupils with knowledge of the correctness of their responses.

Assess pupil performance and define appropriate next step.

Compare pupil performance to specifications in objective(s).

Inform pupil of nature of performance relative to criteria (as modified for the individual student).

Inform pupil of decision as to next step--recycle, review part of task, next task.

Elicit acceptance of decision on part of pupil.

Assignment _____

Name _____

Period of time - dates _____

	Not Demonstrated	Minimum Level	Advanced Level
Preparation			
Objectives . . .			
1. are justified as consistent with authority a synthesis of at least two authorities			
2. specify observable behavior, or products (no range of teaching is assumed)			
3. describe a range of learning outcomes, i.e.-- a. complex as well as simple four or more levels of cognitive domain b. affective as well as cognitive domains fourth level of affective domain c. divergent as well as convergent mode divergent mode is essential component			
Strategies Are Designed . . .			
4. to elicit perceived purpose intrinsic as well as extrinsic			
5. for appropriate practice under more than two kinds of conditions			
6. to provide cues leading to correct responses more than two kinds of cues (resources)			
7. for alternative tasks utilizing more than two modes of learning			
8. to provide feedback at least twice during learning unit for all			
Interaction			
Individualizes . . .			
9. by pre-assessing pupil abilities preassess both competence and perceived purpose			
10. by re-designing strategies after assessment include three sets of plans for different pupils			
Interacts with Pupils To Elicit Specified Behavior, i.e. --			
11. Elicit evidence that pupils accept or value task pupils change from accepting to valuing task			
12. Elicit frequent, appropriate responses obtain comprehension-level responses from at least half of pupils within 30 minutes			

		Not Demonstrated	Minimum Level	Advanced Level
Interact	13. Reinforces responses appropriately successful in at least three modes of reinforcement			
	14. Re-structures strategy during 30 minutes, teacher uses three or more strategies of interaction, with the result that additional pupils meet objectives			
Evaluation	Compare Pupil Responses with Objectives			
	15. Provides feedback to pupils several times, several ways during unit			
	16. Modifies own preparation as a result (no range of teaching performance is specified)			

date _____ Recommendation _____

Clinical Professor _____ Supervising Teachers

_____

_____

APPENDIX B

PRE-PRACTICUM TERMINAL OBJECTIVE

I. TERMINAL OBJECTIVE FOR PRE-PRACTICUM PHASE OF CLINICAL PROGRAM

Given (1) a set of specifics as to number of pupils to be instructed, their age/grade/developmental level, curriculum/subject area (s), instructional time available, and
(2) the available resources of the participating schools and the Resident Center,

the pre-Practicum student will
(1) present an instructional design,
(2) implement the design, and
(3) evaluate the design, such that

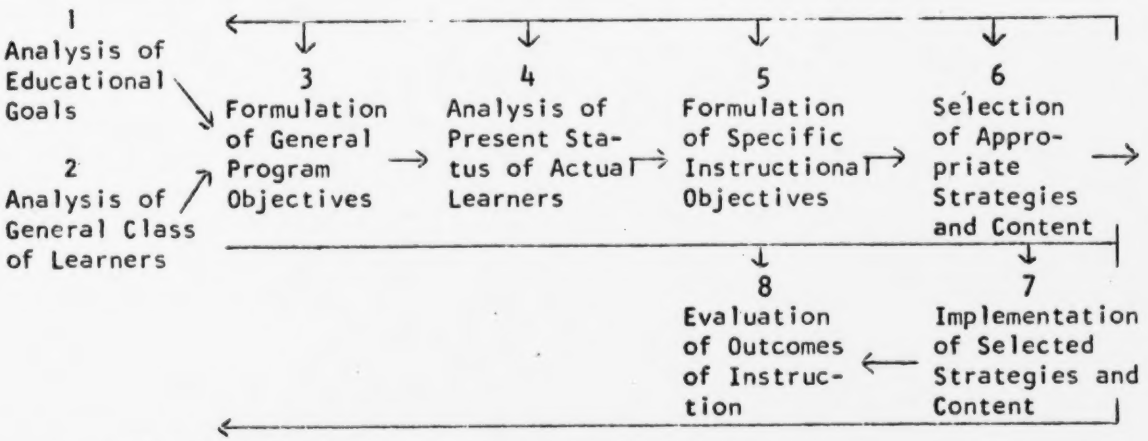
each pupil's progress in those cognitive, affective and psychomotor domains of behavior specified can be documented.

II. DESCRIPTION OF THE TERMINAL OBJECTIVE

A. Relationship to the Instructional Model.

Essentially, this objective calls for application of the generic instructional model presented in the paper discussed September 9. This "cybernetic/regenerative" model is diagrammed below.

SCHEMATIC: CYBERNETIC MODEL OF INSTRUCTION (Functions of Instruction)



B. Sources of Criteria for Measuring Terminal Objective Performance.

Having stated the Terminal Objective and the model from which it is derived, the next question is: "What kinds of things are looked at when assessing one's performance on each of the functions referred to?", or "What tasks must I be able to perform in order to fulfill each function?".

The answer to such lies in what can be called "task analysis" -- identifying the classes of things (tasks) related to fulfilling each function. Thus, the following descriptors offer a more detailed specification of "what you will have to be able to show you can do." The actual criteria for determining your performance will derive from these descriptors and the specific conditions outlined for your "check out" on the Terminal Objective. (The procedure for specifying conditions

is spelled out in III.) In short, what you have to do, when, where, and how you are actually assessed will deal with these descriptors and the actual performance situation arranged -- they cannot be stated at this point.

Following, then, are the criteria descriptors that further delineate the competencies you should be developing during the next few weeks -- the skill and knowledge to be acquired and demonstrated in real situations.

1. Criteria Descriptors for DESIGN of Instruction

   a. The design is one based upon a set of instructional objectives for each pupil, such objectives to be:

      (1) reliable (behavioral)
      (2) valid (logical and/or empirical -- defensible)
      (3) sequenced or arranged

   b. The design hypothesizes a set of optimal learning activities for each pupil, based upon systematically collected data about:

      (1) the pupil's present level of performance
      (2) the "success" the pupil has had with various activities in the past
      (3) research findings re: the probable effects of certain activities with given types of pupils
      (4) availability of resources, such as
          (a) time
          (b) space
          (c) materials
          (d) equipment
          (e) people

   c. The design specifies the measurement procedures to be used to evaluate instructional outcomes, to include:

      (1) tests to be constructed, which are
          (a) valid
          (b) reliable
      (2) informal measures to be made
      (3) processing and storage needs
      (4) decision rules for interpreting data
      (5) procedures for promoting student use of feedback data

2. Criteria Descriptors for IMPLEMENTATION of an Approved Design

   (NOTE: An I.M.'s performance re: this function of instruction can only be assessed, or judged, in terms of the actual design developed. Essentially, this asks the question: "Did the I.M. behave in ways that support carrying-out of the instruction designed?") In answering this question, one usually examines the following categories of behavior:

a. the presence and location of needed supplies, materials, equipment
b. the general environment appropriate to the learning activities to be conducted, e.g.
   (1) temperature
   (2) lighting
   (3) ventilation
   (4) acoustics
   (5) sight lines
   (6) traffic patterns
   (7) student groupings

c. the control of verbal and non-verbal interaction through:

   (1) questioning
   (2) directing
   (3) verbal responses to pupils
   (4) policies/procedures
   (5) reinforcement of appropriate pupil behavior

d. the use of other persons with assigned instructional or support responsibility

3. Criteria Descriptors for EVALUATION of an Implemented Design

   a. the evaluation plan specified in design is carried out
   b. additional evaluation, as obtained from actual implementation of the design is conducted
   c. adjustment of present and subsequent designs in terms of data regarding
      (1) adequacy of performance objectives specified as per
         (a) priorities
         (b) feasibility
         (c) pupil needs
      (2) cost/effectiveness of instructional activities used, e.g.
         (a) behavioral cost
         (b) psychological cost
         (c) dollar cost
   d. feedback of results to pupils
   e. promoting learner use of feedback information

III. SAMPLE CRITERIA AND CRITERIA CHECK PROCEDURES FOR DETERMINING TERMINAL OBJECTIVE PERFORMANCE LEVEL

A. GENERAL SEQUENCE OF EVENTS

1. CP, LS, FS meet to select the actual situation, e.g.

   a. age/grade level of pupils
   b. content/curriculum areas
   c. specific group of individual pupils (10-15)

d. amount of instructional time to plan for (6-10 hours over 4-5 days)
e. due date for design
f. begin date for instruction

2. LS prepares instructional design
3. CP, LS, FS critique design as per design criteria
4. LS revises design as per outcome of critique
5. LS implements approved design
6. LS, FS, CP critique implemented design as per criteria
7. LS modifies plan and/or behavior as per outcome of critique (6 and 7 repeat n times)
8. LS carries out evaluation of instruction as per design specs
9. LS, FS, CP evaluate adequacy of evaluation procedures and appropriateness of conclusions
10. LS exits to Practicum and/or recycles

B. CRITERIA TO BE APPLIED IN CRITERIA CHECK SITUATION

1. Design of instruction (Functions 1-6 of Model)

a. Specify the large units of content (skill/knowledge) to be covered or dealt with (Educational Goals)

(1) how related to existing school district philosophy, goals, etc.
(2) how related to district curriculum guidelines
(3) how related to specific teacher's adaptation/interpretation of the above

b. Specify the assumptions re: the present performance level (entry) of <u>general</u> class of learners re: these goals

(1) how related to what various "authorities say" can be expected of learners of given age/grade devel. level
(2) how related to observations of learners representative of this devel. level
(3) how related to actual performance of this general class of learners

c. Specify and justify general program objectives (educational objectives which serve as the focus of this particular program of instruction)

(1) show how compatible with analyses done at step a
(2) show how compatible with analyses done at step b
(3) specify minimal learner performance levels to be achieved in order for you to judge the subsequent instruction as having been

(a) highly successful
(b) successful
(c) not successful

(4) objectives are technically correct (reliable)

d. Analyze present status of each individual learner, to include

(1) data re: present level of performance on program objectives
(2) data re: rate of progress through program objectives
(3) data re: performance on specified prerequisites
(4) other data deemed relevant at this point in this situation

e. State the specific instructional objectives to be met by each individual learner, to

(1) be technically correct (reliable)

(a) conditions stated
(b) action stated
(c) measures stated

(2) be valid

(a) related to outcomes of steps c and d
(b) justifiable in light of steps a and b

(3) be sequentially arranged

(a) hierarchically arranged
(b) tied to objectives specified at step c
(c) representative of levels within appropriate taxonomy(ies)

(4) include measurement procedures

f. Select the content and strategies to be employed in efforts to enable learners to meet objectives specified in step e

(1) kinds of activities and materials deemed most appropriate to each objective/learner, in this situation, as related to:

(a) research findings re: probable effects upon learners (generalizable empirical data)

(b) past performance of students under these activities and materials (situation specific empirical data)
(c) logical data
(d) feasibility of using, in terms of
(1) time
(2) space
(3) materials/equipment
(4) people

(2) What organizational configuration seems most appropriate for carrying out activities, and why, given

(a) available resources
(b) nature of activities and materials
(c) media needed

(3) What pupil performance measures must be carried out during instruction in order to gain needed decision-making data, e.g.,

(a) written data
(b) oral data
(c) time and effort data
(d) logistical data

(4) What will be the actual sequence of events for implementation of the designed instruction?

2. Design Implementation (Function 7)

a. Is the general environment supportive of the designed instruction?

(1) temperature
(2) lighting
(3) ventilation
(4) acoustics
(5) sight lines
(6) traffic patterns

b. Is the specific environment supportive of activities to be carried out by each learner?

(1) materials present and accessible
(2) equipment present, accessible, and operable
(3) workspace and supplies present
(4) plus 1-6 above, as relevant

c. Does the teacher's verbal and non-verbal behavior support the instructional design, e.g.

(1) questioning behavior
(2) directing of students
(3) verbal responses
(4) execution of school and classroom policies
(5) reinforcement of appropriate pupil behavior

d. Does the teacher adjust activities on basis of observations, as to

(1) equipment failure
(2) task attention behavior of pupils
(3) pupil rate of progress

e. Does teacher collect data as specified in the design of instruction?

3. Evaluation of the Design and its Implementation

   a. Specify how data collected leads to possible changes in design, in terms of

      (1) feasibility of meeting program objectives
      (2) feasibility of each pupil meeting own instructional objectives
      (3) validity of previous assumptions re: this class of learners
      (4) actual performance of learners
      (5) appropriateness of selected activities and strategies
      (6) appropriateness of data collected

   b. Make changes in design in light of data available.

APPENDIX C

COMMENTS ABOUT THE NATURE OF TEACHING, INSTRUCTION AND LEARNING

The following verbiage is an attempt to describe the conceptual framework within which "teaching," especially the instruction dimension, can be viewed. It is not a comprehensive nor exhaustive treatment, but a brief overview of what the evidence to date seems to be saying about what it takes to become and grow as a professional educator ... what is important in this thing called teaching.

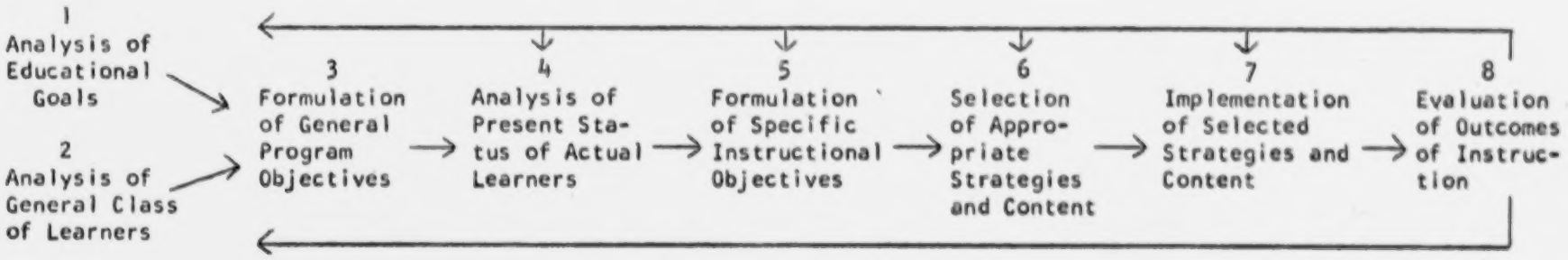
The rationale for presenting it to you at this time is simply this: most people derive more meaning from a set of experiences if they have something to "hang them on" -- some notion of why they are suggested and where they should lead. It is also assumed that this discussion will acquire more meaning as you begin to progress through the activities and experiences available to you in this program.

A. The Cybernetic/Regenerative Model of Instruction

This model simply means that decisions about the ends and means of formal instruction should be data-based; that that which is done (action/intervention) should be related to an appropriate and hoped for outcome (objective), with the success of the action determined by the post-instructional performance (behavior) of the student.

Different people portray or describe the cybernetic model differently, depending upon the degree of detail and specificity they wish to convey (libraries have several books that treat the theory of cybernetics rather thoroughly). For our purposes here, the following would seem to best depict the application of cybernetics to that dimension of teaching called instruction.

SCHEMATIC: CYBERNETIC MODEL OF INSTRUCTION (Functions of Instruction)



Function #1: The objectives of an instructional program should be, and usually are, derived from an analysis of the broad educational goals of formal education; those outcomes for which formal education is given accountable for achieving. Often, much of this analysis has been "done" for the teacher already, via historical precedent, school board philosophy, etc. In other cases, however, teachers are expected to, or see the need to, become involved in such analyses.

Function #2: Just as program objectives are derived from broad educational goals, also considered must be the existing knowledge of classes of learners in general; developmental levels, readiness, prior experiences, etc. Again, the teacher is often expected to contribute this knowledge when the objectives of a particular program are being established. Needless to say, the relationship between functions 1 and 2 is "iterative" -- one must consider both simultaneously. However, the two analyses are distinct enough to separate them into two major functions in the instructional process.

Function #3: Although alluded to in 1 and 2 above, this function of instruction is often overlooked, even though 1 and 2 are carried out. In short, the outcome of these two analyses must result in the specification of program objectives -- objectives that relate to actual student performance expectations. Once specified, they constitute a description of instructional expectations, and each student can be identified in terms of location along this continuum of objectives. Subsequently, instructional programs in general can be assessed in terms of student progress and placement in this continuum.

Function #4: Ultimately, the teacher is confronted with a group of real students, for which she has the responsibility to move as far and as fast as possible along the continuum of program objectives. To do so requires knowledge of the real performance capability of the (each) student -- what can he actually do relative to the objectives of the program. This is often referred to as a diagnostic function, in which the teacher attempts to identify discrepancies between present performance and expected performance.

Function #5: Given a diagnosis of each learner related to program objectives, the teacher is then in a position to specify a set of instructional objectives for each student -- objectives, which if met, will constitute progress toward program objectives. This is part of the general prescriptive stage, and is often called "adjusting objectives for individual learners." The function is clear, however: setting objectives for each learner which are appropriate in terms of program objectives and the present status of the learner.

Function #6: Given appropriate objectives for each learner, the teacher must select the content and strategy that seems to be most appropriate to the objective. In short, the teacher hypothesized that a particular action/intervention will achieve the hoped-for progress. Such decisions are made in light of empirical evidence, logic, past experience, feel, resources, time, etc. It is a most complicated cluster of decisions, calling for a rather large repertoire of skill and knowledge on the part of the teacher.

Function #7: Given a systematically evolved instructional plan (prescription) the teacher now is faced with the task of implementing same. Again, this function calls

for the possession of a rather large skill/knowledge repertoire, for a plan is only as good as its execution. Parenthetically, a teacher's options regarding strategy and design are limited when the teacher can only do a limited number of things in the classroom; you can't plan to do that which you know you are incapable of doing.

Function #8: Although all the aforementioned functions are critical, this is the heart of the cybernetic system. Without carefully collected data about the progress of students, the teacher is left with only a minimal basis for subsequent diagnosis and modification of program. Evaluation makes the model regenerative -- it completes the instructional cycle and provides the data base for making subsequent instructional decisions for each student. Systematic evaluation leads to instruction that becomes increasingly empirical, more affective and less frustrating (successes are increased, failures gradually reduced, and outcomes more predictable).

These, then, constitute the functions of <u>instruction</u> -- the things that must exist or be done, by definition, if cybernetic instruction is to take place. Related to each of this instructional <u>functions</u> is a cluster of <u>tasks</u>, some of which always have to be performed, some of which may have to be performed, depending upon each unique situation. As such, these <u>tasks</u> begin to define the "stuff" or "nuts and bolts" of instruction, and lead to a specification of the kinds of skill and knowledge prerequisite to fulfilling the functions of instruction. It is from such a listing of tasks that the objectives of this training program have been derived. Equivalent to "educational objectives" in the model, these constitute the continuum of performance that is to be demonstrated in order for the program to carry out its

responsibility to prepare competent instructors. How they are achieved and in what order will be determined on the basis of your self-analysis, our knowledge of the experiences available, and data re: your present stage of development. Thus, the training program reflects an application of the model described to a real instructional situation.

B. Although these functions define instruction, they do not define, in total, teaching. Instruction is one dimension of teaching, but there are others to be addressed. Demonstration of the above competencies, plus the competency and willingness to accept professional responsibilities and serve as a professional leader, identifies one as a "teacher."

Although instruction can exist anywhere, the instructional role you are training to assume takes place in a formal, legal, public, social, etc., organization or institution. Functioning as an instructor in formal educational institution describes teaching. Again, there are a cluster of tasks associated with this teaching function that must be performed. These also will be attended to in this program, and will center around three areas of responsibility: (1) to the community, (2) to the school as an institution, and (3) to one's own personal life (to improve one's mental and physical condition). That to which most of this discussion has been devoted is the little "t" of teaching, namely instruction. Big "T" subsumes all that a teacher is expected to be and do, which goes beyond pedagogical ability.